

interesting observations of the luminous properties of Zoophytes. At the same time, it does not appear that Mr. Landsborough, in communicating his observations, has laid any claim to priority. Not having seen Mr. Hassall's paper, his record of phenomena of the same class which have come under his personal notice has still its independent value. The observations of each of our correspondents will be most acceptable to the lovers of natural history; and the degree of originality which they may possess will no doubt be duly estimated by those who are most extensively acquainted with what has been written upon the subject. Both agree in stating that the inquiry was suggested to them by the remark of Mr. Stewart.—ED.]

XLV.—*Excerpta Botanica, or abridged Extracts translated from the Foreign Journals, illustrative of, or connected with, the Botany of Great Britain.* By W. A. LEIGHTON, Esq., B.A., F.B.S.E., &c.

No. 7. *Notes on the genus Corylus.* By ED. SPACH. (Ann. des Sc. Nat. n. s. xvi. 98.)

GENERIC CHARACTERS.

Flores monoici, hiemales, foliis multò præcociore: *masculi* 5- ad 8-andri, aperiãnti, in amenta squamosa, ebracteolata, cylindracea, gracilia, multiflora, jam æstate præteriti anni nascentia moxque perulis denudata dispositi; *feminei* perianthio adnato præditi, staminibus (imò rudimentariis) omninò orbati, in glomerulos parvos sub-multifloros, sub anthesi gemmaceos sessiles perulis (per actâ anthesi tandem deciduis) obtectos, post anthesin demùm in ramulum foliatum excrescentes aggregati, *singuli involucrati*.

Amenta mascula lateralia v. lateralia terminaliaque (in ramulis præteriti anni), e singulis gemmis ad rachin breviusculam nunc gemina (rarè solitaria), nunc 3 ad 6-spicata, jam virginea pendula. *Squamæ staminiferæ* pluriseriatim imbricatæ, unifloræ, concavæ, unguiculatæ, haud peltatæ, subverticales, subcoriaceæ, ciliolatæ, staminibus longiores, cuneato-obovatæ, mucronatæ, anticè appendicibus 2 (squamæ subconformibus et paulò longioribus) infernè cum ungue confluentibus instructæ. *Stamina* secus squamarum basin inordinatim inserta. *Filamenta* brevia, capillaria, indivisa, æstivatione recta. *Antheræ* monotheçæ, ellipticæ, 2-valves, dorso affixæ, apice barbatae. [Filamentis indivisis, antheris monotheçis, staminibusque igitur quasi dimidiatis, *Corylus* a cæteris affinibus generibus omnibus differt.]

Glomeruli feminei solitarii, sub anthesi laterales (ad ramulos præteriti anni, nunc ex iisdem axillis ac amenta mascula, nunc ex axillis inferioribus, semper autem ex aliis gemmis), squamosi. *Involucra* (sub anthesi minima, perulis obtecta, setulis rigidis simul ac ovaria densissimè vestita) subcampaniformia, variè divisa, in rachi brevissimâ spicata, imbricata, geminatim inserta, pleræque postea abortientia; par quodvis bractea solitaria herbacea

persistente accrescente stipatum. *Ovarium* (sub anthesi involutum, vix conspicuum, intus solidum) demùm biloculare (nunc 3-loculare) (loculis contextu celluloso-carnoso omninò repletis), *limbo perianthino* minuto marginiformi coronatum. *Ovula* anatropa, in quovis loculo solitaria, secus dissepimenti apicem appensa. *Stigmata* (sola pistilli jam sub anthesi pars ritè evoluta) 2, exserta, filiformia, colorata, divergentia, marcescentia, basi in stylum brevem confluentia.

Involucra fructifera subcampaniformia v. tubulosa, nunc monophylla, nunc 2- v. rarò 3-partita, segmentis v. limbo plus minusve aut dentatis, aut laciniatis, foliacea (basi incrassatâ, carnosâ, rugosâ), monocarpa, ad apicem pedunculi incrassati (ramulum foliatum plus minusve elongatum terminantis) solitaria, aut gemina, aut plura (nunc fasciculata, nunc glomerata), bracteis multiformibus involucrisque abortivis stipata.

Nux subexserta v. involucre oblecta, istius fundo inserta, subcompressa, v. obscurè 3- v. 5-gona, v. subcylindrica, ossea, lævigata, plus minusve striata, evalvis, obtusiuscula, ecoronata, (limbo perianthino demùm subobsoleto), basi derasa, abortu 1-locularis et 1-sperma, demùm sine involucre decidua.

Semen nucis cavitati conforme, inadhærens, crassum, exalbuminosum, dissepimenti reliquiis affixum. Integumentum tenue, membranaceum, venosum.

Embryo rectus, carnosus, oleosus, albidus; cotyledones magnæ, coherentes, plano-convexæ, haud plicatæ, subovales, basi et apice rotundatæ, germinatione hypogææ; radícula supera, brevis, conica, obtusa, ex toto immersa.

Arbores v. frutices dumosi. *Gemmæ* distichæ, perulatæ; masculifloræ aphyllæ; fœminifloræ simul foliigenæ. *Ramuli* subcylindrici, flexuosi, epidermide subreticulatim rimuloso, mox deciduo. *Folia* 2-stipulata, disticha, brevè petiolata, annotina, tenuia, conspicuè penninervia, plicata, plus minusve rugosa, dentata v. crenata simulque sæpius angulosa v. inciso-angulosa (variatione nonnunquam pinnatifida), variiformia (in quovis individuo) basi æquali v. inæquali, sæpius cordatâ. *Petiolus* cylindricus v. subtrigonus, ecanaliculatus. *Stipulæ* laterales, caducæ, formâ variabili. *Amenta* mascula elongata. *Squamæ* staminiferæ luteo et fusco variegatæ, sub anthesi laxiusculæ. *Antheræ* virginæ purpureæ, sub anthesi citrinæ. *Stigmata* purpurea.

The generic characters ascribed to *Corylus*, even in the most recent works, are in many points more or less faulty. Some authors regard the appendages of the staminiferous scales in this genus as a perianth of two leaves adnate to the scale; but as these appendages also occur on the floral scales of the male catkins of the *Betulaceæ*, which, moreover, possess a true perianth, this view is manifestly incorrect. The number of stamens is variable and not constantly eight; they are inserted without any apparent order towards the base of the

scales, and not superposed in two regular series. The bracteas at the base of the female involucre, far from being always oval or entire, are on the contrary various in form, sometimes entire, and sometimes more or less cut. These bracteas are persistent and accrescent, whilst in the nearly allied genera *Carpinus* and *Ostrya* they are deciduous shortly after flowering. The female involucre is constantly one- and not two-flowered, not sometimes one- and sometimes two-flowered. They are not aggregated without order, but are always inserted in pairs in the depressions (*fossettes*) of a very abbreviated rachis, each pair being accompanied by a bractea. The limb of the perianth of the female flowers is never completely obliterated, but is always perfectly visible on the young fruit under the form of a subapical, pubescent, undulated, or irregularly denticulate swelling. The inferior flowers of each cluster are almost always abortive, as is also the case with a greater or lesser number of the superior flowers; consequently the fruit borne on one peduncle are very variable in number, and frequently reduced to one or two. Lastly, the fructiferous involucre is neither always tubular nor always bipartite.

The hybernal flowering, the appendages of the stamiferous scales, the single-celled anthers, the accrescence of the bracteas of the female flowers, and the hypogean cotyledons, constitute, conjointly with the female inflorescence and the structure of the fructiferous involucre, the chief essential characters by which *Corylus* is distinguished from the two nearly allied genera *Ostrya* and *Carpinus*. In these latter genera the flowering is vernal, the stamiferous scales are without appendages, the anthers two-celled, either completely disunited or at least parted in the middle. The whole, or greater portion of the female flowers are fertile, and produced in large pendent spikes. Their accompanying bracteas are fugacious, and the cotyledons are developed into seminal leaves.

Sectio I. AVELLANA, Spach.

Involucrum fructiferum inerme, 2-partitum (rard 3-partitum, nonnunquam uno latere tantum usque ad basin fissum), subcampaniforme; segmentis inciso-dentatis, v. palmatis. Nux involucre longior v. brevior.

1. **CORYLUS COLURNA**, Linn. Wats. Dendr. Brit., tab. 99.—*Corylus byzantina*, Seb. Mus. 1. tab. 27. fig. 2.—*Corylus byzantina* et *Corylus Colurna*, Hortul. Arborea, corticis stratis exterioribus in lamellas crassas deciduas solubilibus. Involucris fructiferis (sæpissimè 2-partitis) nucibus subduplo (plusve) longioribus: segmentis conniventibus, multifido v. multipartito-palmatis.

Hab. in Thraciâ (ex auctoribus antiquioribus); in Bannatu Hungariæ (ubi, ex cl. Rochel, sylvas extensas efficit); in Italiâ superiori (ex cl. Reichenbach. Flor. Germ. excurs.).

This species is thus characterized by Willdenow:—"C. stipulis lanceolatis, acuminatis; calyce fructûs duplici: exteriore multipartito, interiore tripartito, laciniis palmatis; foliis subrotundo-ovatis, cordatis." By Poiret (Encycl.), "C. stipulis linearibus, acutis; calycibus profundè dissectis; fructu maximo:" and by Reichenbach, "C. nuce abbreviatâ; calyce fructûs patentissimo, duplici: exteriore multipartito; interiore tripartito; laciniis palmatis; foliis subrotundo-ovatis cordatis inciso-angulatis." Many of these characters are incorrect, and none of them sufficiently constant for specific definition.

The fructiferous involucre, or calyx of the above-cited authors, is in this, as in all the other species, simple; that which has been incorrectly taken for an exterior involucre or calyx being nothing more than the involucre of the abortive flowers and the bracteas of the fertile ones, which are equally found at the base of the fruit in the other species. The involucre of the abortive flowers always remain very minute. The form and size of the bracteas vary infinitely in all the species, and afford no good character. According to Reichenbach, the fructiferous involucre of *C. Colurna* is very patulous; but that distinguished botanist appears to have fallen into error from the examination of badly dried specimens, since the involucre is constantly straight and connivent up to the summit or nearly so, as we have determined from an examination of a great many different varieties in a living state. This structure of the fructiferous involucre is in fact the sole character by which the fruit of *C. Colurna* can be distinguished from that of certain varieties of *C. Avellana*; for although, in general, the segments of the involucre of *C. Colurna* are much more deeply lacinated than is ordinarily the case in *C. Avellana*, still there are some varieties of the former which have the segments split only to one-third, or at most to one-half, and some very common varieties of *C. Avellana* which have the involucreal segments very deeply palmatifid. The involucre of *C. Colurna* is sometimes nearly glabrous, sometimes more or less pubescent, sometimes almost cottony, and often bristled with hairs or glandular bristles. Its size is as variable as in *C. Avellana*, or rather as in all the species. The straps (*lanières*) of its segments are very entire, or jagged, or inciso-dentate, or bi- or tri-furcate, more or less acuminate, or only pointed, very frequently more or less divaricated at the summit, generally narrow, being either linear, linear-lanceolate, demi-lanceolate or subfalciform, less frequently very broad and

falciform, or demi-lanceolate, or oblongo-lanceolate. According to Willdenow and Reichenbach, one of its distinctive characters was the tripartite involucre; but an examination of a large quantity of the fruit has demonstrated that this is only an accidental variety which occurs also in *C. Avellana*, and which is very much rarer than the normal condition, in which the involucre is divided to its base into two nearly equal segments. Another variety, much more common both in *Columna* and *Avellana*, has the involucre divided only on one side down to its base, as in that of *Carpinus*.

The nut, as in all the species, is either more or less compressed, or subcylindrical, or obscurely 3- or 5-gonous, sometimes subglobose, sometimes obovate, oval, ovoid or oblong, whilst in size it is equally variable. The number of fruits borne on each peduncle affords no distinctive character, being in all the species either solitary or aggregated, from 2—7 or rarely more.

The male catkins of *C. Columna* are generally longer than those of its congeners, but in other respects their structure is similar. This is not the case however with the fertile flowers.

The most variable organs of *Corylus* are undoubtedly the leaves and stipules; and their different modifications of form, size, and pubescence are so inconstant on each individual, as to render it vain to employ them even as *characters of varieties*.

The leaves of most species are generally suborbicular or ovali-orbicular, though frequently oboval, oval, oval-oblong, elliptico-oblong or oblong; in general they are suddenly terminated in an acute, more or less elongated point; less frequently they are obtuse or gradually tapered into a point. Their base is cordate (sometimes slightly so, sometimes more or less deeply so); less frequently rounded, rarely pointed, sometimes nearly equal, and sometimes more or less unequal. Their margins, from base to summit, are doubly or unequally dentate, or crenulate, or jagged, often moreover more or less strongly angular or incised, or sometimes even pinnatifid; sometimes plane, and sometimes undulated or crisped. Both surfaces are sometimes more or less pubescent, sometimes so only on the under surface; sometimes, though very rarely, glabrous on both surfaces, except the axils of the nervures of the inferior surface, which are always more or less strongly bearded. The petiole is cylindrical or obscurely trigonous, not channelled, more or less short, hairy, pubescent, hispid or glabrous. The hairs or bristles sometimes glandulose, sometimes not so. These variations of pubescence occur also on the stipules, young shoots and peduncles.

The stipules are very variable in form and size² in all the species and on each individual, according as they pertain to the leaves of the flowering branches or to the leaves of the luxuriant shoots (*pousses gourmandes*) [*barren shoots?*]. Those of the floral branches are very fugacious, membranous, subsarciose, chiefly liguliform; those of the luxuriant shoots (*pousses gourmandes*) being on the contrary less caducous, subherbaceous, oval, ovali-oblong, ovali-lanceolate, oblongo-lanceolate, oblong or sublinear, obtuse or pointed, or acuminate.

Certain modifications of the fructiferous involucre of *C. Columna*, having been found to be very constant, appear sufficiently remarkable to establish the following varieties, though it is not pretended that intermediate varieties may not exist as well as other varieties equally distinct. Those here noted, with the exception of one form referred to, that figured by Watson, were observed on six trees in the *Jardin du Roi*.

- a. *brachycarpa*, Spach.—*Corylus Columna*, Wats., Dendr. Brit., tab. 99. Involucre ($1\frac{1}{2}$ —2 inches long) three times longer than nut, pubescent (not setiferous); segments divided beyond the middle into linear-lanceolate or demi-lanceolate straps (*lanières*), very acuminate, generally very entire.
- β. *trichochlamys*, Spach. Involucre (15—18 lines long) one-half longer to twice as long as nut, hispid, glandular; segments divided beyond the middle into linear-lanceolate or subfalciform straps, rather broad, acuminate, some bi- or tri-furcate at the summit, others very entire or dentate.
- γ. *macrochlamys*, Spach. Involucre (2 inches long) 2—3 times longer than nut, downy, not setiferous; segments divided for $\frac{1}{3}$ rd into linear-lanceolate or falciform straps, acute, unequal, slightly jagged.
- δ. *leptochlamys*, Spach. Involucre (about 1 inch long) $\frac{1}{3}$ — $\frac{1}{4}$ longer than nut, not hispid, cottony; segments divided nearly to their base into denticulate or dentate or very entire or 3-furcate straps, acute, generally linear and narrow.
- e. *avellanoides*, Spach. Involucre (about 15 lines long) $\frac{1}{3}$ rd longer than nut, downy, glandular, not hispid; segments divided for $\frac{1}{3}$ rd into mostly broad, oblongo-lanceolate, acute, inciso-dentate lobes.

2. *CORYLUS AVELLANA*, Linn.—*Corylus americana*, Michx! Flor. Bor. Amer. (et auct. Americ. plurimis*).—*Corylus Avellana* et

* This pretended species is absolutely identical with *C. Avellana* of Europe. Michaux distinguished it by its amplified (*i. e.* much longer than the nut) involucre, unequally multifid, bristled with glandular hairs; but this structure of the involucre is equally very frequent with the European *C. Avellana*; and moreover we have seen specimens of this same species gathered in the United States, in which the involucre was perfectly similar to that of

Corylus americana, auctor. plur. (non? Willd.*).—*Corylus heterophylla*, Fisch. †.—*Corylus Turtschaninovii*, Bess. in Florâ, 1834, Beybl. vi.—*Corylus bulbosa*, Turtsch. (ex Bess., l. c.).—*Corylus alba*, *C. americana*, *C. arborea*, *C. Avellana*, *C. barcelonensis*, *C. bicarpa*, *C. corymbosa*, *C. crispa*, *C. glomerata*, *C. grandis*, *C. heterophylla*, *C. laciniata*, *C. maxima*, *C. minor*, *C. nana*, *C. ovata*, *C. pedemontana*, *C. pumila*, *C. rotunda*, *C. rubra*, *C. striata*, *C. subconica*, *C. sylvestris*, *C. tenuis*, and *C. urticæfolia*, Hortul.

Fruticosa, dumosa, v. rarius subarborescens et unicaulis. Cortice lævigato v. demùm rimuloso, nunquam deciduo. Foliis sæpiùs suborbicularibus v. ovato-subrotundis. Involucris-fructiferis (sæpissimè bipartitis) nucibus subbrevioribus, v. paulò longioribus (rarius subdimidio longioribus); segmentis inciso-dentatis v. palmatifidis, demùm plus minusve patulis.

The characters generally attributed to this species are, stipules oval or oblong, obtuse; leaves cordiform, orbicular, acuminate; fructiferous involucre inciso-dentate, and spreading at the summit. This definition, with the exception of the inconstant characters, is no otherwise defective than in seeming to indicate that the fructiferous involucre of *C. Avellana* is not bi- or tripartite as that of *C. Colurna*, and that this structure of the involucre constitutes the difference of the two species; but, as before mentioned, the involucre of *C. Avellana* differs essentially from that of *C. Colurna* in its segments being more or less patulous and not connivent; for in the most usual, and consequently the normal state, the involucre of *C. Avellana* is likewise divided to the base into two nearly equal segments; less frequently this involucre is divided to the base on one side only, as in the Yoke-Elms, (*Charmes*); and very rarely it is divided to the base in three unequal segments. As to the other pretended distinctive characters of *C. Avellana*, they are as inconstant as those of *C. Colurna*, and consequently are valueless as specific distinctions. We shall therefore merely repeat, that the leaves, stipules and nut of *C. Avellana* present all the variations of form and size above described; that its fructiferous involucre varies in pubescence like that of *C. Colurna*, and the hairs of the involucre, petioles, peduncles, and young shoots are in like man-

one of the commonest varieties in our woods, viz. with an involucre scarcely as long as the nut, slightly or not at all glandulose, and slightly inciso-dentate.

* The *C. americana* of Willd. (*Spec.*) has been since considered by its author himself as a distinct species from *C. americana*, Mich., and he has named it *C. pumila*. This is unknown to us, but, judging from the definition of its author, it can scarcely be anything else but a new synonym of *C. Avellana*.

† We cannot detect any difference between *C. heterophylla*, Fisch., and the ordinary *C. Avellana*.

ner either terminated by a gland or not; that the involucre is sometimes shorter than, sometimes as long as, and sometimes longer than the nut; that nevertheless it rarely exceeds the nut by more than one-third, whilst in *C. Colurna* the nut is often two to three times shorter than the involucre; and lastly, that the segments of this involucre, slightly inciso-dentate in certain varieties, are, on the contrary, more or less deeply palmatifid in other varieties, not only in those in cultivation, but also in those which are very common in woods; and in this latter case the secondary segments (*lanières secondaires*) are sometimes equal, sometimes more or less unequal, very entire, or jagged, or inciso-dentate, or pinnatifid; in form sub-linear, or linear-lanceolate, or lanceolate, or semi-lanceolate, or oblongo-lanceolate, or suboval, or deltoid, and sometimes acute, sometimes acuminate.

The more notable modifications of the fructiferous involucre afford the following varieties:—

- a. *brachyclamys*, Spach.—*Corylus Avellana sylvestris* et *Corylus Avellana ovata*, Willd.—Involucre a little shorter or a little longer than the nut; segments irregularly inciso-dentate; nut obovate, or oval, or oblong; involucre pubescent, or hispid, glandular, or non-glandular. This variety appears to be commoner than all the others in the woods.
- β. *schizochlamys*, Spach.—Involucre generally as long as, or about $\frac{1}{3}$ rd longer than the nut; segments palmatifid as far as the middle or beyond; straps (*lanières*) chiefly jagged or inciso-dentate. Nut variable in form. Involucre sometimes hispid and glandular, sometimes only pubescent with or without glands. This variety is common in the woods in the environs of Paris.
- γ. *macrochlamys*, Spach.—*Corylus Avellana glomerata*, Hort. Kew.—*Corylus Avellana maxima*, Audib. Cat. Involucre large (often about 18 lines long and as many broad), one-half longer than the nut; segments palmatifid; straps (*lanières*) inciso-dentate, or subpinnatifid, broad, acute. Nut large, subglobose. Cultivated variety.
- δ. *cylindrochlamys*, Spach.—*Corylus Avellana grandis*, Hort. Kew.—*Corylus Avellana maxima*, Willd. Involucre (15—18 lines long) subcylindrical, a little longer than the nut; segments inciso-dentate at the summit. Nut obovate or subglobose, or ellipsoid, very large. Cultivated variety known by the name of *Filbert*.

Of the numerous variations of the leaves of this species, the two following alone merit special notice:—

Corylus Avellana urticifolia, Audib. Cat.—*Corylus laciniata* et *Corylus urticifolia*, Hortul. Leaves deeply sinuato-pinnatifid; segments acute, inciso-dentate.

Corylus Avellana crispa, Loud.—*Corylus crispa*, Hortul. Leaves inciso-angular and crisped.

Sectio II. TUBO-AVELLANA, Spach.

Involucrum fructiferum inerme, monophyllum, ultra nucem in tubum nunc bifidum, nunc trifidum, nunc uno latere tantum fissum, ore clausum, apice dentatum v. laciniatum productum.

3. CORYLUS TUBULOSA, Willd. Guimp. et Hayn. Deutsch. Holz. tab. 152.—*Corylus maxima*, Mill.—*Corylus arborescens*, Duroi; Moench.—*Corylus rubra*, Borkh.—*Noisetier franc*, Poit. et Turp. Arbres fruitiers, tab. 12. Fruticosa, dumosa, v. rarius sub-arborescens. Cortice lævigato v. demùm rimoso nunquam deciduo. Foliis sæpiùs subrotundis v. ovato-subrotundis. Involucris-fructiferis conoideis, nucibus nunc paulo, nunc subdimidio longioribus.

Hab. in Austriâ, Hungariâ, Italiâ superiori (Reich. Fl. Germ. excurs.), nec non in australioribus Europæ regionibus.

- *β. purpurea*.—*Corylus tubulosa purpurea*, Audib. Cat.—*Corylus purpurea*, Hortul. Foliis involucrisque purpureo-fuscis. Varietas hortensis.

The *C. tubulosa*, known under the name of the true Filbert (*Noisetier franc*), has been considered by many authors as only a variety of *C. Avellana*; but it appears to us incontestably distinct, from the structure of its involucre, although we have been utterly unable to discover other differences between these two species. The leaves and stipules vary as in *C. Avellana*. The fructiferous involucre is $1\frac{1}{2}$ —2 inches long, downy or hispid, generally glandular, sometimes bi- or trifid, sometimes divided on one side only, and irregularly inciso-dentate or laciniated at the summit. Nut oblong, or oval-oblong, or oval, more or less compressed, sometimes violet, sometimes of a brown-red colour. The integument of the seed is purple or white.

4. CORYLUS ROSTRATA, Hort. Kew.; Willd. Arb. tab. 1. fig. 2. *Corylus americana*, Walt. Carol.—*Corylus cornuta*, Duroi. Fruticosa, pumila. Foliis sæpiùs oblongis v. oblongo-obovatis, duplicato-serrulatis (vix aut ne vix angulosis). Involucro-fructifero basi subglobozo, supernè longè cylindraceo-tubuloso, nuce multò longiore, sæpiùs hispidissimo. (V. s. sp.)

Hab. in Americæ septentrionalis montibus Alleghanies.

This species, according to the authors of the 'Flora of North America,' does not rise to more than three or four feet. The leaves are much smaller than those of the preceding species, slightly cordiform at the base. The tube of the fructiferous involucre is in length about eighteen lines, slender, ordinarily bifid as far as the middle, with lacinate segments.

Sectio III. ACANTHOCHLAMYS, Spach.

Involucrum fructiferum, 2-partitum, segmentis laciniatis, spinosis.

5. CORYLUS FEROX, Wall. Plant. Asiat. Rar. tab. 87. Arborea.
Foliis sæpiùs oblongis, acuminatis. Nuce durissimâ, compressâ,
involucro duplò breviori (*Wall. l. c.*).

Hab. in Nepaliæ montibus.

A tree twenty foot high and two foot in circumference. Branches slender, smooth, brownish. Leaves three to four inches long, pubescent on both surfaces, hairy on the nervures, similar to those of the elm. Fruit aggregated in pendent heads. Involucre hairy. Nut with a very thick shell. (*Wallich, l. c.*)

XLVI.—*The Birds of Ireland.* By WM. THOMPSON, Esq.,
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[Family FRINGILLIDÆ, continued from p. 288.]

THE GREEN GROSBEAK OR GREEN-LINNET, *Fringilla Chlo-
ris*, Temm. (Genus *Coccothraustes*, Briss.), is common and resident in suitable localities throughout Ireland. This bird is generally described simply as found in cultivated districts, but this gives no correct idea of the true haunts of the species or of its partialities. These I have seen set forth with the nice discrimination and fullness which are so desirable, in one work only—the ‘British Birds’ of Sir Wm. Jardine.

This author remarks on the green-linnets “frequenting cultivated districts in *the vicinity of gardens and limited plantations*. During winter they congregate in large flocks, feeding on the stubble ground on various small seeds, and resorting towards night-fall to the vicinity of the *plantations or evergreens surrounding some mansion * * **. In spring, when paired, they resort to the *garden and shrubbery*.” The words in *italics* mark the nice discrimination alluded to, and are in entire accordance with my own observation on the favourite haunts of the green-linnet, and to it alone will they strictly apply. By the plantation of shrubberies, I have known this handsome bird to be attracted to a rather wild district in which it had hitherto been a stranger, and soon become plentiful, the Portugal Laurel with its dense foliage being its favourite resort. This species is usually described as a late-breeding bird; but in the locality just alluded to, and which is at a considerable elevation, a journal-note of April 4th, 1832, mentions busy preparations for nestling going forward in glen, shrubbery, and garden. A nest of this species, found in a beech-hedge, was so tastefully lined as to be considered